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PATHOLOGICAL POLYPLOIDY IN SEEDLINGS OF CORN AND SORGHUM

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The ethyl mercury phosphate present in a commercial seed dust produces a characteristic dwarfing of seedlings of cereals. The histological symptoms consist of hypertrophy of meristematic organs, and eventually of the apical meristem. These malformed organs consist of enormously enlarged, parenchymatous, multinucleate cells. The several nuclei in a cell vary greatly in size and chromatin content. The small "micronuclei" have less than the normal diploid complement of 20 chromosomes. The "giant nuclei" are polyploid, many of them containing well over 100 chromosomes. The multinucleate and polyploid conditions are brought about by incomplete, multipolar mitosis.

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